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ABSTRACT

Emphasizing a humanistic perspective, a committee at Virginia Commonwealth University was constituted to design and critique a course in modern fiction employing innovative technology and methodology. Educational objectives were identified, including critical thinking skills, questioning strategies, and affective development. The course featured a contract grading system, a variety of educational activities, and an adaptive feedback system. Student evaluations of the course were positive. (EMH)

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TITLE: "Humanism and Technology, A Model for Integrating Educational Technology in the Humanities Classroom"

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At Virginia Commonwealth University, an urban university in Richmond, Virginia, a modest effort is being made to develop a model course design which blends principles from educational technology into humanities studies. The effort at VCU is consciously inconspicuous and cautious since previous attempts at other universities have been met with shouts of "heresy" from noted humanists. Within a year the model for uniting opposites, science and humanism, will be ready to stand or fall on its demonstrable merits. The following will attempt to chronicle the odyssey of the model's development in the context of literary study from the prevalent skepticism of the humanists to the description of its most salient characteristics. Inherent in the effort to bring educational technology to humanities studies is a three-part question relating to effective teaching: Can students learn more, like it more, and grow as individuals with the aid of behaviorally oriented techniques?

Issues - Science vs. Humanism

According to the novelist Kurt Vonnegut, "a virtuous physicist is a humanistic physicist. He wouldn't knowingly

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hurt people. He wouldn't knowingly help policemen or soldiers hurt people. He knows that a scientist can be an accessory to murder most foul."[1] Most scientists realize and accept their responsibility to mankind and perform their duties most admirably. However, many non-scientists have come to wonder where the scientist's fellow man sits on his scale of values. The "murderous" syphilis studies at Tuskegee and the hepatitis injections given to mentally retarded children at Willowbrook are two notorious examples of dehumanization in scientific experimentation. True, these are examples of abuses committed within the biomedical sector but often such occurrences lead to the entire scientific community being tarred by the same brush.

The scientist who is striving to improve learning and teaching in higher education, the educational technologist, is one of those whose efforts are being thwarted by those who doubt the wisdom and beneficence of experimentation emanating from applied psychology. His chief adversaries stand on the far side of the traditional split between the sciences and humanities. Entire English, philosophy and history departments, and many faculty members in the social sciences who display humanistic ideals, see the efforts of the educational technologist as misguided and a threat to their philosophy of education. The adversarial relationship is strong and the costs are high. The highest price is paid

by students in humanities classes who will never experience the learning benefits that can come from the judicious application of educational technology principles to their studies.

The resistance to systematic approaches to teaching and learning are most evident in the heart of the humanities, the English department. For almost a decade they have toyed with the idea of "English by objectives" for composition, but composition is not the most cherished part of their curriculum. The study of literature with all its affective ramifications is the holiest of holies, and subsequently has remained an impregnable fortress of reactionary teaching methodology. That is not to imply that linquistically snobbish English professors are put off by words such as "taxonomy" and "stimuli" used in the same sentence as "poesy." In fact, such jargon only causes their skin to crawl. There are more fundamental values at stake which systemitization and specification threaten to debase.

When an English professor is pressed to describe his opposition to educational technology, the conversation, or debate as the case may be, becomes laden with abstract allusions to humanistic values. Elusive comments are made about the paramount value of human life and individual integrity with sneering references to B. F. Skinner's Beyond Freedom and Dignity. The issue is freedom. Freedom to think and liberty to choose are held as dearly in the

humanist's philosophy of education as they are in the American philosophy of government.

The implication for instructional settings is that external authority or control must be rejected at least in theory. In practice, requirements will be made on students and restrictions imposed, but to the degree that controls are tightened, humanistic values are perverted. Exploring possibilities of applying technology to the study of literature has often been short stopped with a rhetorical question: "And control, isn't that what systematic programming of instruction is all about?" "No, not necessarily" is the working assumption in the effort to confront the humanist's view that educational technology is fine for the sciences and scientists but not for the humanities or human beings.

The Model - Objectives, Techniques, Evaluation

With the humanist's philosophy of freedom in education in mind, as well as his evident conservatism which warned against an exotic design, the conversion of a standard lecture-discussion course on modern fiction was undertaken. The goal was to implement strategies from educational technology which would not only be inoffensive but enhance the study of humanities. To chart the level of offense throughout the process of development, an ad hoc steering committee of professed humanists was established at the college where the model was originally conceived and still functions in that role, albeit at a considerable distance. Their

role has been to comment on the techniques employed as the design took form and to evaluate its ultimate effectiveness.

In a series of dialogues with English professors about the teaching of literature, student performance goals began to surface. The goals fell generally into two broad categories. First, a student should become a critical reader of literature. Second, the process of becoming a better critical reader should lead, perhaps serendipitously, to the student's growing as an individual human being. They profess a concern for both the mind and the spirit. In more specific terms, they have cognitive and affective objectives.

Specifying the first objective on critical reading was an arduous process of hammering abstractions into palpable reality. At first the superior critical reader was said to be proficient in "independently establishing hypotheses about aesthetic, formalistic, and content issues in the art he confronts and in pursuing these hypotheses to conclusions that are satisfactory to his professors and peers." Continuing calls for clarification lead to a grudgingly given paraphrase: "Yes, I guess you could say that good critical readers are kids who are able to ask questions about the stuff they read and come up with pretty good answers on their own." Mastering critical reading skills became a matter of mastering skills in asking and answering questions.

Specifying the second objective concerning student growth was an even more taxing effort than defining the critical reader but far less successful. At best, student growth was something the professor observed obliquely and with a variety of criteria and standards. Showing less timidity, more perseverance, more independence at the end of the course than the beginning, were mentioned as observable measures of growth. When other examples were not forthcoming, it became obvious that the measurement of growth objectives was largely an intuitive process. There may be validity in the notion that the measure of growth must be taken internally, but an inconsistency was present. Student growth goals were being measured by the instructor's intuition rather than the student's. The intuitive measurement of growth, as unreliable as it may be, should be taken first by the student, not the instructor.

In searching the literature of educational technology for methods, the claims and characteristics of programmed instruction were irresistibly attractive. Its two major claims, uniformity in student performance and high levels of mastery, were enticing to even the most guarded skeptics on the steering committee. The idea of 90/90 criteria was provocative to say the least. To think that 90% of the students could learn at the 90% level, that nine out of ten students could be legitimately given an A, was a thought worth pursuing.

In analyzing the instructional characteristics that lead to such claims, four proved to be viable for the study of literature: student learning objectives, active learning, adaptive feedback to students, and adaptive feedback to instructors. Student learning objectives were seen as predetermined and clearly discernible learning goals which could be specified on a daily basis. Active learning was contrasted with passive learning where the student receives instead of pursues new knowledge. Adaptive feedback to the student and instructor was the kind of timely information which created opportunities for improved performance.

The problem was to determine how the characteristics of one learning mode could be adapted to another. Programmed learning characteristics were drawn from a primarily self-instructional materials focused setting and were to be re-cast in a group setting relying on student and teacher interaction. Moreover, the issue of a controlled learning environment and individual freedom would permeate every design decision. It would be impossible to present in full detail the rationale for all the decisions made and all the techniques employed. The following design profile should, however, indicate the nature of its methods and underlying assumptions.

A contract grading system is used which requires each student to decide within the first two weeks of the course

if he is going to work for an A, B, or C grade. The terms of the contract are fully articulated as to attendance, the quality and quantity of paper assignments, quizzes, tests, and in-class participation. Contracting is not used to tighten control but to reduce the arbitrariness and authoritarianism of grading. Each student is required to freely participate in the grading decision-making process. Freedom is an imposed responsibility.

Student learning objectives are established based on the critical reader's ability to establish and pursue hypotheses. Hypotheses in the form of open-ended questions are given out well in advance of each class. Specific questions to be covered in class are assigned to small groups of student discussion leaders. However, objectives are not the sole property of the instructor. Students are required to turn in additional questions the day before each class for which the instructor prepares answers. Students are required to exercise their freedom to determine course content.

With predetermined student and instructor objectives, learning goals in the form of questions to be answered, active learning is automatic. With questions in hand, a student opens a book and knows what to search for. To support active reading, the instructor gives mini-lectures several days in advance of a reading assignment to alert students to what they

might encounter that is not covered by the questions. This is done in part to avoid the common situation of the student who, after he has read a book, listens to a lecture and mutters, "Gee, I didn't see that!"

Adaptive feedback is provided for students on daily assignments and major requirements. Student answers to questions are submitted the day before the questions are to be discussed in class. This provides an opportunity for the instructor to make marginal notes for the student to consider before he discusses the issue with his peers. In addition, paper assignments that do not meet quality standards at the contracted grade level are returned with directions for revisions and the offer of editorial assistance. There is no penalty for such remediation since the final performance level is considered to be more important than the time or effort it takes to reach it.

Adaptive feedback is given to the instructor on a daily basis through the student answers submitted in advance. By surveying the answers before class he can prepare comments to fill in the cognitive gaps and avoid dwelling on points that are well understood. In addition to daily feedback on student learning, the mid-term examination is designed to determine what the students have learned as well as what topics may be necessary for reviewal. Also, the end-of-course instructor

evaluation is filled out by students at mid-term. This provides the instructor with detailed information on aspects of his teaching behavior which he may wish to alter during the second half of the course. Overall, the mid-term activities are designed for formative evaluation purposes rather than summative. It is an opportunity for the student and instructor to improve, rather than a time of trial and punishment.

The incorporation of these and other techniques in the study of literature has resulted in a course design which fares well under three models of summative evaluation. Cognitive achievement, socio-metric and humanistic models of learning and teaching effectiveness have been applied to the course.

In terms of cognitive achievement, the design did not produce 90/90 criteria--90% of the students did not achieve As. Three sections of the course have produced a learning curve which has 40% at the A level, 40% at the B level, 15% at the C level, and less than 5% below C. The criteria achieved has been 80/80--at least 80% of the students earn a B or better. Random samples of tests, papers, and classroom performance have been reviewed by the steering committee and the grades confirmed.

A quasi socio-metric evaluation model concerning student opinion about instructor and student relationships ranks the

course in the upper 10% of all similar courses. The comments which accompanied the statistics are perhaps more meaningful. The clearest chord has been, "I liked it because I learned more." In addition, the perception that the instructor "cared enough about the subject to organize it well" and "cared enough about us to listen and help" were equally resounding.

The humanistic model of evaluation, the measure of human growth and development, has been the most difficult to implement. To date the structured interview has been used at the end of the course. Students indicate that they feel more confident in their ability to read and discuss what they have read but have trouble describing the "warmth" they feel for the subject, their fellow students, and instructor. At this time, a fifty-item pre- and post-test questionnaire is being developed to determine more succinctly the achievement of affective course objectives. Through the scientific magic of Chi Square analysis and beta weights, humanists will be able to measure what they had previously only dreamed of achieving.

Implications for An Advanced Degree Program

If the model for teaching literature with the judicious use of educational technology is successful, there will be a possibility that it will be adopted in other areas of

humanities study. However, change in higher education is more than a matter of presenting persuasive data. If the organizational norm system does not value such data, whatever success the model enjoys will be short lived. Altering the organization's norms is fraught with Byzantine complexities, but one clear place to start is with the future numbers of higher education. The advanced degree programs of the learning sciences and the humanities should be attentive to the values, assumptions, and techniques each holds. Interdisciplinary courses, internships, and interdepartmental consulting quickly come to mind as important activities in an advanced degree program in applied learning systems. In addition, some thought should be given to recruiting into the program the host of unemployed and unemployable humanists who already hold advanced degrees.

Perhaps the graduate students who study in each other's disciplines will not face each other later in their careers as professional adversaries. There are benefits to be gained by everyone involved, especially the students of the humanities. However, from a more self-centered standpoint, the educational technologist who can move closer to the humanities from his home in the sciences, may realize one fine morning an unexpected benefit. As Kurt Vonnegut noted, "Being a humanistic scientist, incidentally, is a good way to get two Nobel Prizes instead of one."[2]

FOOTNOTES

[1]Richard M. Restak, "Experimentation on People Without Dehumanization," The New York Times, July 20, 1975, IV, p. 15:3.

[2]Ibid.